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David W. Mercer
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**The NIEMR/EMF Controversy:
The Social Construction of Scientific Knowledge
and Science Policy in the
'Gibbs' Powerline Inquiry 1990/91.**

A thesis submitted in fulfilment of the requirements
for the award of the degree of

DOCTOR OF PHILOSOPHY

from

THE UNIVERSITY OF WOLLONGONG

by

David W. Mercer, B.A. (Hons)

Department of Science and Technology Studies

1993

DECLARATION

This work has not been submitted for a degree to any other university or institution.

David W. Mercer

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D. W. Mercer

**The NIEMR/EMF Controversy:
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SUMMARY

This thesis examines the scientific controversy concerning the health hazards of non-ionizing electromagnetic radiation (NIEMR) and electric and magnetic fields (EMF). It focuses on the social construction of scientific knowledge and political shaping of science policy which took place during the NSW State Government's Inquiry into Community Needs and High Voltage Transmission Line Development 1990/91 chaired by Sir Harry Gibbs - the 'Gibbs' Inquiry'.

The thesis begins by providing an historical overview of the NIEMR/EMF debate. Next it reviews the literature on scientific/technical controversy leading to the development of an eclectic model for evaluating scientific/technical controversy. This model is then used to guide analysis of the Gibbs' Inquiry. The social interests behind scientific argument appearing in two of the main submissions put before the Inquiry are analysed and similar patterns of argument and rhetoric are observed. Next, the micro-politics accounting for the Inquiry's outcome of the recommendation of 'prudent avoidance' are detailed.

This work seeks to document an important emerging scientific controversy, provide a detailed history of an important piece of science policy decision-making, and apply insights from the sociology of scientific knowledge to improve understanding of the dynamics of the construction of controversial scientific knowledge in public settings.

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